MicroProf® 200

200 mm stand-alone device - international standard

The **MicroProf® 200** is the high-performance measuring device for the non-contact and non-destructive characterization of almost all surfaces and films, and has already been employed successfully by many companies. This surface measuring instrument is based on FRT´s established multi-sensor technology and is capable of performing numerous measuring tasks within just one system. A high-resolution CWL sensor allows for easy and reliable measuring of, e.g. topography, roughness and contour. With a wide range of additional sensors it is also possible to adapt the **MicroProf® 200** optimally and individually to your measuring task. Using the TTV module for inspection from both sides or using the module for automatic sample handling (MHU), the **MicroProf® 200** can also be adapted easily to the customer's new measurement requirements at any time. Simultaneously, the highest automation requirements get fulfilled.

MicroProf® 200

MEASURING TASKS

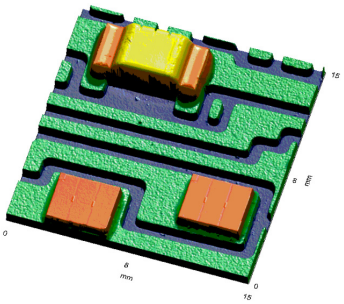
Roughness *Step Height* ***Film Thickness*** *Wear* ***Bow*** ***3D Map***
Roll off Amount ***TTV*** *Waviness* ***Warp*** *Defect Inspection*
Membrane Bow *Bumps* ***Layer Stacks*** ***Topography*** ...

SYSTEM CHARACTERISTICS

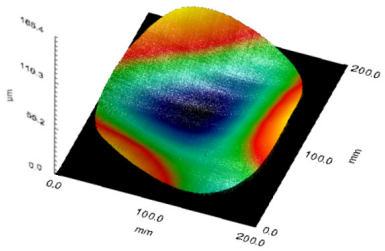
- full multi-sensor capability
- housing in modern industrial design
- integrated CCD camera with add-on illumination
- control and measurement computer with TFT monitor
- fast xy precision table with high motion and positioning accuracy
- stable granite construction with excellent damping properties
- simple and efficient control with FRT Acquire software
- fully automated 2D and 3D measurements through FRT´s Acquire Automation XT metrology software
- user-friendly FRT Mark III evaluation software with numerous evaluation and display options according to DIN-ISO and SEMI standards

BENEFITS

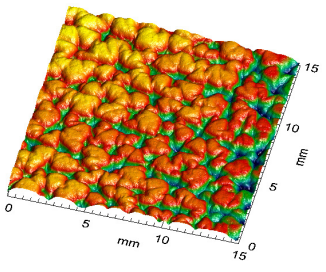
- established measuring device from the technological leader in surface metrology
- surface measuring instrument for the highest demands in industry and research
- one measuring system for multiple tasks and applications
- professional quality assurance based on precise optical metrology
- can be used flexibly, is future-proof and can be expanded at any time
- durable, minimal servicing and low maintenance
- application specific consulting and service from skilled FRT experts



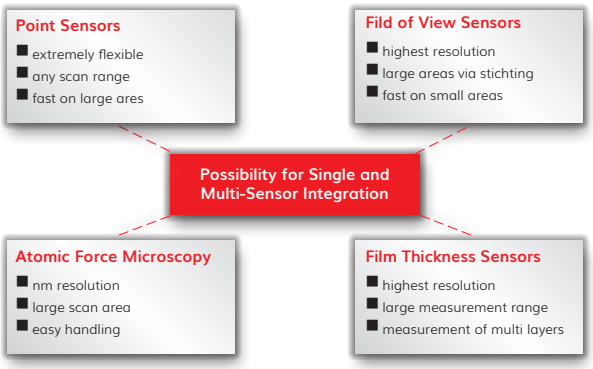
Assembled SMD device
Reference: Danfoss Silicon Power GmbH



Topography of a bowed 8-inch wafer



3D measurement of a leather imitation structure
Reference: Audi AG, Ingolstadt



Measuring Principle

Diverse measurement tasks require variable solutions – the **MicroProf® 200** can be equipped with various sensors for measuring topography, coating thickness and sample thickness. FRT multi-sensor technology offers a wide range of optical point and field of view sensors or even an atomic force microscope. Depending on your requirements, these can be combined in the **MicroProf®** or retrofitted at any time. Use both the flexibility of point sensors with freely adjustable measuring field sizes and the speed of the field of view sensors for your measurements. A variety of measurement tasks can be performed within a large measurement range (from centimeters down to the sub-nanometer range) using a flexible and cost-effective tool which can be expanded at any time.

System	
assembly	gantry design
sensor	multi-sensor
Scanning Stage	
travel	250 mm x 200 mm
drive type	direct drive
bearing type	crossed roller bearing
encoder resolution	50 nm
flatness	< 2 µm / 100 mm
max. speed	300 mm / s
load capacity	5 kg
z-axis	motorized axis
z-axis travel	50 mm (100 mm optional)
System Requirements	
environmental requirements	clean, vibration-free, stable temperature
input voltage	110 V / 220 V AC, 1 phase
footprint (LxWxH)	1100 mm x 820 mm x 1800 mm
weight	approx. 500 kg
Measuring Characteristics	**CWL 600 µm ***
measuring range XY	250 mm x 200 mm
measuring range Z	600 µm
resolution (lateral)	2 µm
resolution (vertical)	6 nm

* sensor CWL 600 µm taken as an example, other sensors are available